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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/541,426 - 04/03/00 KIM

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MMC1/0523

EXAMINER

NGUYEN, D

ART UNIT

PAPER NUMBER

2871

DATE MAILED:

05/23/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/541,426

Applicant(s)

Kim et al.

Examiner

Dung Nguyen

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☒ All b) ☐ Some* c) ☐ None of:

1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892) 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 5-6 20) ☐ Other:

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DETAILED ACTION

Specification

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, it is confusing and unclear what is meant by “an electric field inducing window in said pixel region”. For the purpose of the examination, it is assumed that an electric field in the pixel region.

Regarding claim 6, it is unclear what the shape of the thin film transistor (TFT) is. According to figure 2, TFTs do not have an L-shaped while the claimed invention disclose the L-shaped. Correction to the language is suggested to clarify the claimed subject matter.

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Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

5. Claims 1-3, 5, 7-22 are rejected under 35 U.S.C. 102(e) as being anticipated by Woo et al., US Patent No. 6,067,140.

The above claims are anticipated by Woo et al. figures 2A-2B and accompanying text which disclose a multi-domain liquid crystal display (LCD) device comprising:

- a pair of substrates (101, 102) facing each other;
- a liquid crystal layer (125);
- a plurality of gate bus lines (105), a plurality of data bus lines (109), a plurality of TFTs (110) including a gate insulator (115), a passivation layer (116), and a pixel electrode (121);
- a photo-alignment layer (117 or 118) having an alignment direction formed by exposing to UV light (col. 3, ln. 60).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woo et al., US Patent No. 6,067,140.

Woo et al. disclose the claimed invention as described above except for a negative uniaxial film or a negative biaxial film disposed on at least one substrate. One of ordinary skill in the art would have realized the desire to dispose a negative uniaxial film or a negative biaxial film on at least one substrate of an LCD device for compensating the phase difference of the direction according to viewing-angle. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to form a negative uniaxial film or a negative biaxial film on at least one substrate of an LCD device because it is a common practice in the art to improve contrast and/or reduce inversion, often in the same viewing areas in an LCD device.

8. Claims 4 and 23-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woo et al., US Patent No. 6,067,140, in view of Bos et al., US Patent No. 6,141,074.

Regarding claim 4, Woo et al. disclose the claimed invention as described above except for a pre-tilt angle is $1^{\circ} \sim 5^{\circ}$. In fact, the pretilt angle in the LCD device is small as shown by Bos et al., e.g., $0.1^{\circ} - 10^{\circ}$ (col. 3, ln. 9). Therefore, such disclosed range in Bos et al. makes possible the claimed range of $1^{\circ} \sim 5^{\circ}$ and overlapping ranges are at least obvious. *In re Malagari*, 499 Fed.2d 1297, 182 USPQ 549 CCPA 1974.

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Regarding claims 23-26, Woo et al. disclose the claimed invention as described above except the liquid crystal layer has a positive or negative dielectric anisotropy and chiral dopants. Bos et al. do disclose a multi-domain LCD can be form with a positive or negative dielectric anisotropy liquid crystal layer (see Summary of the Invention). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to form a liquid crystal layer having a positive dielectric anisotropy or negative dielectric anisotropy because the use of one conventional material over another merely depends on the desire of the manufacturer (i.e., homogeneous or homeotropic alignment) and/or the availability and practicality of the material for the chosen manufacturing process (see Summary of the Invention). In addition, it would have been obvious to one of ordinary skill in the art at the time of the invention to use a chiral dopant as a component in the liquid crystal material in order to attain an uniform twist in a liquid crystal layer.

9. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Woo et al., US Patent No. 6,067,140, in view of Applicant's submitted prior art, Koma et al. .

Regarding claim 6, although Woo et al. do not disclose the "L-shaped" TFT in the LCD device, it would have been obvious to one skill in the art to form a TFT having a "L-shaped" as evidence from the Applicant's submitted prior art, Koma et al. figure 5 since it is well known in the art in order to increase an aperture ratio of an LCD device.

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Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Dung Nguyen whose telephone number is (703) 305-0423. The fax phone number for this Group is (703) 308-7722.

Any information of a general nature or relating to the status of this application should be directed to the group receptionist whose telephone number is (703) 308-0956.

DN
05/16/2001


William L. Sikes
Supervisory Patent Examiner
Group 2871